

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) An isolated nucleic acid comprising a sequence encoding a polypeptide or a fragment thereof having galacturonosyltransferase (GalAT) activity and a transcription regulatory sequence, wherein said sequence encoding the GALAT and the transcription regulatory sequence are operably linked, and wherein said sequences are not associated together in nature.
2. (Original) The nucleic acid of claim 1 wherein the polypeptide or the fragment has approximately 50% amino acid sequence similarity with the corresponding sequence as set forth in SEQ ID NO: 2.
3. (Currently amended) The nucleic acid of claim 2 wherein the amino acid molecule is selected from the group consisting of the sequences as set forth in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, ~~32, 34, 36, 38, 40, 42, 44, 46, 48, and 50.~~
4. (Original) The nucleic acid of claim 3 wherein the polypeptide comprises the amino acid sequence as set forth in SEQ ID NO: 2.
5. (Original) The nucleic acid of claim 4 wherein the polypeptide is encoded by the nucleic acid sequence as set forth in SEQ ID NO: 1.

6. (Original) An isolated polypeptide or a fragment thereof having galacturonosyltransferase GalAT activity wherein the polypeptide or the fragment has approximately 50% amino acid sequence similarity with the corresponding amino acid sequence as shown in SEQ ID NO: 2.
7. (Currently amended) The polypeptide or the fragment of claim 6 which comprises the amino acid sequence selected from the group consisting of the sequences as set forth in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, ~~32, 34, 36, 38, 40,~~ 42, 44, ~~46,~~ 48, and 50, or the corresponding sequence thereto.
8. (Original) The polypeptide or the fragment of claim 7 which comprises the amino acid sequence as set forth in SEQ ID NO: 2 or the corresponding sequence thereto.
9. (Previously amended) The polypeptide or the fragment of claim 8 wherein the amino acid sequence is encoded by the nucleic acid as set forth in SEQ ID NO: 1.
10. (Previously amended) An antibody which specifically recognizes the polypeptide or the fragment of claim 7.
11. (Previously amended) An expression vector comprising in operable linkage the nucleic acid according to claim 1 and a plant-expressible promoter.
12. (Original) The expression vector of claim 11 wherein said promoter is heterologous to said nucleic acid.
13. (Previously amended) A transgenic plant which has been transformed with the expression vector of claim 11.

14. (Original) A transgenic plant having modified pectin.
15. (Original) A transgenic plant having altered GalAT activity wherein the altered activity is due to a mutation in the *GALAT* gene.
16. (Previously amended) Progeny of the transgenic plant of claim 13.
17. (Previously amended) Modified pectin isolated from the transgenic plant of claim 14.
18. (Original) A product comprising the modified pectin of claim 17.
19. (Original) A method of generating a plant with altered GalAT activity by mutating the *GALAT* gene.
20. (Original) A method of preparing a polymer comprising a galacturonic acid and a polymer with a GALAT protein under conditions suitable to form at least one covalent linkage between the galacturonic acid and the polymer.
21. (Original) The method of claim 20 wherein said polymer is selected from the group consisting of homogalacturonan, rhamnogalacturonan I, rhamnogalacturonan II, xylogalacturonan, apiogalacturonan or other galacturonic containing polymer.
22. (Original) The method of claim 21, wherein said polymer is homogalacturonan.
23. (Previously amended) The method of claim 20 wherein the GALAT protein comprises the amino acid sequence as set forth in SEQ ID NO: 2 or a fragment thereof having GalAT activity.

24. (New) The antibody of claim 10 wherein the antibody is generated against a synthetic peptide.
25. (New) The nucleic acid of claim 3 wherein the coding sequences are selected from the group consisting of SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 41, 43, 47, and 49.